

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Richard A. Blanchard et al.
Application No.: Unassigned
Date Filed: Filed Herewith
Title: HIGH VOLTAGE POWER MOSFET HAVING A VOLTAGE SUSTAINING
REGION THAT INCLUDES DOPED COLUMNS FORMED BY TRENCH
ETCHING USING AN ETCHANT GAS THAT IS ALSO A DOPING
SOURCE
Group Art: 2814
Examiner: Unassigned
Docket: GS 174 D1

INFORMATION DISCLOSURE STATEMENT (IDS)

Mail Stop Patent
Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22231-1450

SIR:

In accordance with 37 C.F.R. §1.56 and in compliance with 37 C.F.R. §§1.97 and 1.98, the references listed on attached Form PTO/SB/08 and/or subsequently identified herein, are being submitted herewith for consideration by the United States Patent and Trademark Office.

I. COPIES

- a. ☐ A legible copy of (i) each U.S. and foreign patents; (ii) each publication or that portion which caused it to be listed; and (iii) all other information or that portion which caused it to be listed, is included herewith.
- b. ☒ Any patents, publications or other information which are listed on PTO/SB/08 which are not enclosed herewith were previously cited by or submitted to the PTO in one of the following applications which has been relied upon for an earlier filing date under 35 U.S.C. §120:

U.S. Serial Number
10/039,284

U.S. Filing Date
12/31/2001

II. CONCISE EXPLANATION OF THE RELEVANCE (check at least one box)

- a. ☒ Except as may be indicated below in (b) of this section, all of the patents, publications or other information are in the English language (concise explanation not required).
- b. ☐ A concise explanation of the relevance of all patents, publications or other information listed that is not in the English language is as follows:
- c. ☐ The following additional information is provided for the Examiner's consideration:

III. ☐ CROSS REFERENCE TO RELATED APPLICATION(S)

The Examiner is advised that the following co-pending application(s) contain(s) subject matter that may be related to the present application. By bringing this (these) applications to the Examiner's attention, Applicant(s) does(do) not waive the confidentiality provisions of 35 U.S.C. §122.

Serial No.

Filing Date

Art Unit

FEES

- IV. ☒ THIS IDS IS BEING FILED UNDER 37 C.F.R. §1.97(b): (check one box)
- a. ☒ within three months of the filing date of a national application other than a continued prosecution application under § 1.53(d) (37 C.F.R. §1.97(b)(1)). No fee or statement is required.
 - b. ☐ within three months of the date of entry of the national stage as set forth in § 1.491 in an international application (37 C.F.R. §1.97(b)(2)). No fee or statement is required.
 - c. ☐ before the mailing date of a first Office Action on the merits (37 C.F.R. §1.97(b)(3)). No fee or statement is required.
 - d. ☐ before the mailing date of a first Office Action after the filing of a request for continued examination under § 1.114 (37 C.F.R. § 1.97(b)(4)). No fee or statement is required.
- V. ☐ THIS IDS IS BEING FILED UNDER 37 C.F.R. §1.97(c): (check one box)
before the mailing date of any of a Final Office Action under 37 C.F.R. §1.113, a Notice of Allowance under 37 C.F.R. §1.311, or an action that otherwise closes prosecution in the application (See 37 C.F.R. §1.97(c)).
- a. ☐ No statement; therefore, charge deposit account 50-1047 the fee set forth in 37 C.F.R. §1.17(p).
 - b. ☐ See the statement below. No fee is required.
- VI. ☐ THIS IDS IS BEING FILED UNDER 37 C.F.R. §1.97(d):
on or before payment of the issue fee and is accompanied by the following:
- 1) a statement under 37 C.F.R. §1.97(e) as provided below; and
 - 2) charge deposit account 50-1047 the petition fee set forth in §1.17(p).
- VII. ☐ STATEMENT UNDER 37 C.F.R. §1.97(e) (check only one box, if applicable)
The undersigned hereby states that
- a. ☐ each item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of IDS; or
 - b. ☐ no item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application, and to knowledge of the person signing the statement after making reasonable inquiry, no item of information contained in the IDS was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement, or
 - c. ☐ some of the items of information contained in the IDS were cited in a communication from a foreign Patent Office. As to this information, the undersigned states that each item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby states that no item of this remaining information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application or, to the knowledge of the person signing the statement after making reasonable inquiry, no item of information contained in the IDS was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement.
- VIII. PAYMENT OF FEES
- ☐ A check in the amount of _____ is enclosed for the above-identified fee(s).
 - ☐ Please charge Deposit Account No. 50-1047 in the amount of \$180.00 for the above-indicated fee(s).
 - ☒ If Applicant has overlooked any additional fees, or if any overpayment has been made, the Commissioner is hereby authorized to credit or debit Deposit Account 50-1047.
 - ☐ Two Copies of this paper are attached for Deposit Account charges and debits.

It is Applicant(s)' opinion that the claims presently on file patently distinguish the present invention from each of these references. The above references are being cited only in the interests of candor and without any admission that they constitute statutory prior art or contain matter which anticipates the invention or which would render the same obvious, either singly or in a combination, to a person of ordinary skill in the art.

If the Examiner has any questions concerning this IDS, he/she is requested to contact the undersigned. If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule (with a petition if necessary) and charge the appropriate fee to Deposit Account No. 50-1047.

Respectfully submitted,
Mayer Fortkort & Williams, PC



Karin L. Williams
Attorney for Applicant
Reg. No. 36,721
Tel. 908-518-7700

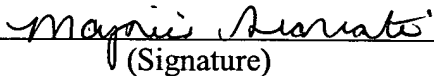
Mayer Fortkort & Williams, PC
Customer Number 27774

Enclosures: ☒ PTO/SB/08
☐ References
☐ Foreign Search Report
☐ Other:

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I hereby certify that this correspondence is being deposited with the United States Postal Service as "Express Mail Post Office to Addressee" service under 37 CFR 1.10 in an envelope addressed to: Mail Stop Patent, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on 2/23/04.

Marjorie Scariati
(Printed name of Person Mailing Correspondence)


(Signature)

Please type a plus sign (+) inside this box. FORM PTO/SB/08

Substitute for form 1449A/PTO				<div> <div>Complete if Known</div> <div> <div>Application Number</div> <div>Unassigned</div> </div> <div> <div>Filing Date</div> <div>Filed Herewith</div> </div> <div> <div>First Named Inventor</div> <div>Richard A. Blanchard et al.</div> </div> <div> <div>Group Art Unit</div> <div>2814</div> </div> <div> <div>Examiner Name</div> <div>Unassigned</div> </div> <div> <div>Attorney Docket Number</div> <div>GS 174 D1</div> </div> </div>	
<div> <div>INFORMATION DISCLOSURE</div> <div>STATEMENT BY APPLICANT</div> </div>					
(use as many sheets as necessary)					
Sheet	1	of	2		

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Class/Subclass		
	1	2001/0053568A1	438/138	Deboy et al.	12-20-2001
	2	2001/0036704A1	438/270	Huetting et al.	11-01-2001
	3	2001/0026977A1	438/268	Hattori et al.	10-04-2001
	4	5,216,275	257/493	Chen	06-01-1993
	5	5,108,783	437/63	Tanigawa et al.	04-28-1992
	6	4,893,160	357/23.4	Blanchard	01-09-1990
	7	4,711,017	437/20	Lammert	12-08-1987
	8	4,569,701	148/188	Oh	02-11-1986
	9	4,419,150	148/187	Soclof	12-06-1983
	10	4,140,558	148/175	Murphy et al.	02-20-1979
	11	6,479,352	438/268	Blanchard	11-2002
	12	6,534,836	257/401	Osanai	03-2003
	13	6,608,350	257/341	Kinzer et al.	08-2003
	14	5,759,921	438/711	Rostoker	06-1998
	15	5,912,497	257/366	Baliga	06-15-1999
	16	6,465,304	438/268	Blanchard	10-15-2002
	17	6,576,516	438/268	Blanchard	06-10-2003
	18	6,656,797	438/268	Blanchard	12-02-2003
	19	6,566,201	438/268	Blanchard	05-20-2003

[illegible]

Examiner Signature		Date Considered	
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation, if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English Language Translation is attached

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	Unassigned
				Filing Date	Filed Herewith
				First Named Inventor	Richard A. Blanchard et al.
				Group Art Unit	2814
Examiner Name	Unassigned				
Sheet	2	of	2	Attorney Docket Number	GS 174 D1

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	1	Deboy, G. et al., “A new generation of high voltage MOSFET’s breaks the limit line of silicon,” <i>Int’l Electron Devices Meeting</i> , December 1998, 26.2.1,pp. 683-685.	
	2	Chen, Xing Bi et al., “A Novel High-Voltage Sustaining Structure With Buried Oppositely Doped Regions,” <i>IEEE Transactions on Electron Devices</i> , Vol. 47, No. 6, June 2000, pp. 1280-1285.	
	3	Cezac, N. et al., “A New Generation of Power Unipolar Devices: the Concept of the Floating Islands MOS Transistor (FLIMOST),” <i>Proceedings of the 12th Int’l Symposium on Power Semiconductor Devices & ICs</i> , Toulouse, France, May 22-25, 2000, pp. 69-72.	
	4	Lee, Ming-Kwang et al., “On the Semi-insulating Polycrystalline Silicon Resistor,” <i>Solid State Electronics</i> , Vol. 27, No.11, 1984, pp. 995-1001.	

Examiner Signature		Date Considered	
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation, if not in conformance and not considered. Include copy of this form with next communication to applicant.

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